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ABSTRACT

A study was conducted which continued the investigation of the underlying structure of supervision by empirically testing Bernard's (1979) two-dimensional model and Littrell et al.'s (1979) unidimensional developmental model of supervision. To test the models, 25 counselor trainees from two master's counselor programs were compared to 23 counselor trainees from a doctoral counseling psychology program on their perceptions of supervision. Additionally, the trainees' perceptions were compared to the three-dimensional map for supervisors found by Ellis and Dell (1986). Twelve stimuli were generated by combining each of the four supervisor roles (teacher, counselor, consultant, and self-supervisor) with the three supervisor functions (process, conceptualization, and personalization). Subjects made paired comparison ratings for perceived dissimilarity of the 12 supervisor role stimuli and rated the 12 stimuli on 10 attributes. Goodness of fit measures indicated that both supervisors and trainees used the same cognitive map of supervision, a finding consistent with Ellis et al. The supervisory model proposed by Bernard was somewhat supported, but little support was found for the Littrell et al. model. In general, these results suggest that: (1) current models of supervision are conceptually too narrow; and (2) supervisors' and trainees' cognitive maps of supervision are similar. (ABL)

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Counselor Trainees in M.S. versus Ph.D. Programs: Testing Two Models of Supervision

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Counselor Trainees in M.S. versus Ph.D. Programs: Testing Two Models of Supervision

In recent reviews of the supervision literature, several authors have applauded the growing number of empirical studies of supervision of counselor trainees (Hansen, Robins, & Grimes, 1982; Leddick & Bernard, 1980; Russell, Crimmings, & Lent, 1984). Further, they welcomed the more sophisticated research designs and methodologies which some investigators have employed. Yet, only a few researchers have attempted to uncover the dimensionality or underlying structure of supervision (e.g., Reising & Daniels, 1983; Worthington, 1984). These researchers have largely relied upon exploratory and atheoretical (versus confirmatory) factor analysis or principal components procedures. The reviewers also noted that the models of supervision, which intend to specify the salient functions and roles of supervision and guide research, lack empirical validity.

Researchers have begun to test empirically a few of the many available models of supervision. Hogan's (1964) developmental model of supervision has received some validation (e.g., Heppner & Roehlke, 1984; Reising & Daniels, 1983) as has Stoltenberg's (1981) Counselor Complexity Model (e.g., McNeill, Stoltenberg, & Pierce, 1985; Wiley, 1982). Although Ellis and Dell (1986) found minimal empirical support for Littrell, Lee-Borden, and Lorenz's (1979) developmental model of supervision, their results partially validated Bernard's (1979) Discrimination Model. Thus, relatively few models of supervision have been explicitly investigated. More importantly, the empirical evidence suggests that the current models of supervision are deficient in comprehensively explaining the supervision of counselor trainees (Ellis & Dell, 1986; Ellis, Dell, & Good, 1986; Heppner & Roehlke, 1984). With this in mind, research is needed which has the expressed purpose of ferreting out the dimensionality of supervision from both a theoretical and confirmatory position. Ascertaining the salient supervsion dimensions could provide a more comprehensive framework to guide research as well as to construct complete models of supervision.

Multidimensional Scaling (MDS) is a statistical method very adept in uncovering the underlying structure of supervision or any collection of stimuli. MDS includes the experimental procedures and data collection methods as well as the statistical analysis itself. For the purpose of supervision research, MDS permits testing models of supervision that would otherwise be difficult to operationally define and assess (e.g., Bernard, 1979; Littrell et al., 1979). By deriving stimuli from the models being tested, problems of finding psychometrically valid measures of variables are obviated without sacrificing the ability to rigorously test the model. In fact, one of the long term benefits of MDS research in supervision is determining stable stimulus configurations and subsequently developing outcome and process measures that are psychometrically sound. Another advantage of using an MDS paradigm is that no a priori assumptions are made regarding the criteria (dimensions or cognitive map) participants rely on when making judgments about the stimuli. The statistical power of MDS depends more on the number of

stimuli than on the number of participants as with general linear model procedures (cf. Kruskal & Wish, 1978; Haase & Ellis, 1986); Thus, small sample size, characteristic of supervision research, can be used without sacrificing the statistical power of the analysis. One MDS procedure, individual differences or three-way MDS, is designed to yield an overall stimulus configuration plus provide data on how well the proximity data for individuals or groups of participants were fit by the stimulus configuration. In addition to the dimensional weights which indicate how the individuals or groups used the stimulus space, stimulus configurations for each individual or group are provided by individual differences MDS. That is, three-way MDS allows the comparison of both individuals and groups. Because MDS procedures can be confirmatory as well as exploratory in design, models and theories can be rigorously tested (e.g., Ellis & Dell, 1986; Rounds, Davison, & Davis, 1979). Finally, MDS procedures employ not only a variety of data collection methods (e.g., pair-wise comparisons, ranking stimuli, categorizing stimuli, and preference methods), but also several types of data can serve as or be transformed into proximity data (for a more complete description see Davison, 1983; Kruskal & Wish, 1978).

The strengths and advantages of MDS are not without limitations. As with common factor and principal components analyses, guidelines exist for MDS to help the investigator determine the number and interpretations of the dimensions (Davison, 1983; Kruskal & Wish, 1978). Like factor extraction methods, however, there is often sufficient ambiguity in the MDS solutions to make those decisions somewhat arbitrary. As Kruskal and Wish note, MDS is a better data reduction method than principal components analysis. Thus, in those situations where the investigator has a choice of using factor analytic procedures or MDS procedures, MDS is likely the preferred method. A second drawback of MDS research is the tradeoff of the relative "ease" of collecting paper and pencil type data (e.g., pair-wise comparisons) and the sophistication required to perform the more complex data analysis.

Having identified the research needs for supervision and the strengths and limitations of MDS procedures, MDS is the research paradigm of choice. The purpose of this study was to continue in the investigation of the underlying structure of supervision by empirically testing Bernard's (1979) two dimensional model and Littrell et al.'s (1979) unidimensional developmental model of supervision. To test the models, counselor trainees from two M.S. counseling programs were compared to counselor trainees from a Ph.D. counseling psychology program on their perceptions of supervision. Additionally, the trainees' perceptions of the underlying structure (dimensionality or cognitive map) of supervision were compared to the three dimensional map for supervisors found by Ellis and Dell (1986). Because this study is an extension of Ellis and Dell and Ellis et al. (1986), both studies will be briefly described.

In the Ellis and Dell (1986) study, the researchers investigated the underlying structure or dimensionality of supervision as perceived by practicing supervisors from a theoretical and confirmatory position (versus exploratory). Bernard's (1979) two dimensional model and Littrell et al.'s

(1979) unidimensional, developmental model clearly specified both the content and number of underlying dimensions of supervision. Bernard proposed two dimensions: supervisor roles (teacher, counselor, and consultant) and functions of supervision (to develop the trainees' process skills, conceptualization skills, and personalization skills). Littrell et al. described a four stage model emphasizing supervisor roles (facilitator, teacher/counselor, consultant, and self-supervisor). They proposed a single dimension of control or responsibility for structure in supervision that shifts from the supervisor to the trainee as the trainee becomes increasingly competent. Specification of the dimensions was necessary to empirically test the two models using a confirmatory multidimensional scaling paradigm.

The nine stimuli used in the study were derived from Bernard's model by combining the three supervisor roles with three functions of supervision (process, conceptualization, and personalization). The stimuli were compatible with both models because the two models share an emphasis on supervisor roles. Supervisors had varying levels of experience as supervisors of counselor trainees and worked with pre-practicum to post-internship counselor trainees.

The MDS solution that emerged from Ellis and Dell's study revealed three dimensions. That is, a three-dimensional cognitive map emerged that supervisors used to think about supervision. The first dimension was interpreted as contrasting the supervision functions of process versus conceptualization and as behavioral versus non-behavioral. The second dimension contrasted the supervisor role of consultant with the combined roles of teacher and counselor. Alternative interpretations of the second dimension were based upon who structures the supervision interaction and who has power in it in terms of supervisor versus trainee. The third dimension was interpreted as cognitive versus emotional and non-supportive versus supportive.

Ellis et al. used a confirmatory MDS design to determine if the cognitive map used by counselor trainees in a Ph.D. program in counseling psychology differed from the supervisors' perceptions found by Ellis and Dell. They found that the three dimensional stimulus configuration of supervision used by supervisors fit the trainees' judgments of the same nine stimuli surprisingly well. In fact, the supervisors' stimulus space accounted for a little less than 90% of the variance in the trainees' judgments. A clearer picture emerged of the three dimensions of supervision for nine stimuli. The first dimension retained its interpretation as a process-personalization-conceptualization continuum. The trainee data offered a more eloquent understanding of the second dimension. At one pole of this dimension, the supervisor roles of teacher and counselor combined where the supervisor has the power and authority to structure supervision were perceived as confrontive and critically important to effective supervision. The opposing pole was contrasted to the non confrontive consultant supervisor role where the trainee has the power and structures supervision. The latter pole was not perceived by trainees to be critically important to effective supervision. The third dimension appeared to distinguish between emotional, supportive supervision of competent trainees and cognitive-behavioral, evaluative supervision of neophyte trainees.

The results of the Ellis and Dell and Ellis et al. studies provided little support for Littrel et al.'s developmental model. Supervisors and doctoral trainees did, however, perceive the roles of teacher and counselor as similar yet distinct from the role of consultant. They found some support for Bernard's model. Two dimensions were found to relate to supervisor roles and functions. The supervisor roles of counselor and teacher were not differentiated as proposed by Bernard. Probably the most important finding was that three dimensions were necessary to account for supervisors' perceptions of supervision.

As the authors noted, the studies were not without limitations. Given the ratio of the number of stimuli to the number of dimensions, the MDS solution may not be stable. Replicating the study with another sample and with more stimuli would make substantial progress in finding the stable and reliable structure that underlies supervision. Obtaining the perceptions of supervision of counselor trainees from another academic department could prove bountiful, especially in comparison to the structure of supervision found by Ellis and Dell. Thus, the present study was undertaken in part to determine the cognitive map counselor trainees from two master's in counseling programs and a doctoral counseling psychology program use in their perceptions of twelve supervision stimuli and if the perceptions of the two groups differ. Further, the trainees' perceptions were compared to the supervisors' perceptions determined by Ellis and Dell (1986). Bernard's (1979) 3 x 3 (supervisor roles by supervisor function) model was extended to a 4 x 3. That is, the self-supervisor role was added across the three supervisor functions for two reasons: the inclusion of the self-supervisor role by several models of supervision (e.g., Boyd, 1978; Hogan, 1964; Littrell et al., 1979; Stoltenberg, 1981) and to increase the number of stimuli to number of dimensions ratio.

Method

Participants

A total of 71 counselor trainees from the counseling psychology department of a large northeastern university were invited to participate in this study. Thirty-eight of those invited were either currently enrolled in the doctoral program in counseling psychology or unlicensed recent graduates. The remaining 33 counselor trainees were currently enrolled in an M.S. program specializing in either counseling or rehabilitation counseling. Of the 71 trainees invited, 23 doctoral program trainees and 25 master's program trainees chose to voluntarily participate in the study. The average age of the 16 men and 32 women trainees was 29.2 (*SD* = 6.11) years old. All trainees had completed at least one semester of supervised practica and were currently seeing an average of 7.3 (*SD* = 4.76) clients per week. The trainees' highest level of education was distributed as: 6.3% Ph.D. in psychology, 6.3% master's in psychology, 47.9% bachelor's in psychology, 20.8% master's in counseling, 12.5% non-psychology bachelor's, and 6.3% master's in some other field. The trainees were scattered across a variety of clinical settings: 29.2% were at a community mental health center, 14.6% were at a primary or secondary school setting, 14.6% were in the department run Psychological

Services Center, 10.4% were in university or college counseling centers, 4.2% were at a Veterans Administration hospital, and 25.0% were at other clinical sites, with rehabilitation settings the most prominent. Some of the trainees who chose not to participate in the study provided their rationale. In almost every case, time constraints was the reason given. Attrition was balanced across program, sex, and age.

Stimuli

Nine of the twelve stimuli used in the study were directly derived from Bernard's (1979) model of supervision (see Ellis & Dell, 1986; Ellis et al., 1986). THe other three stimuli resulted from extending Bernard's model to incorporate the self-supervisor role which is a component of several supervision models (e.g., Boyd, 1978; Hogan, 1964; Littrell et al., 1979; Stoltenberg, 1981). Specifically, the twelve stimuli were generated by combining each of the four supervisor roles (teacher, counselor, consultant, and self-supervisor) with the three supervisor functions (process, conceptualization, and personalization). The stimuli and definitions are presented in Table 1.

Procedure

Questionnaire packets were mailed to 71 student counselors. Each packet contained a letter soliciting volunteer participation, instructions, a demographic questionnaire, definitions of the twelve stimuli, and the scaling questionnaire. The scaling questionnaire was generated by the Jiffy Scale computer program (Cohen & Davison, 1980) which controls for sequencing effects.

Participants made paired comparison ratings for perceived dissimilarity of the twelve supervisor role stimuli. The 66 pairs of stimuli were judged along a 9-point scale ranging from very similar (1) to very dissimilar (9). Participants also rated each of the twelve stimuli on ten attributes. These attribute rating scales used a 9-point bipolar Likert-type scale and will be referred to as bipolar attribute scales. The positive poles of the ten attribute rating scales were (a) extremely cognitive, (b) extremely emotional, (c) extremely behavioral, (d) extremely supportive, (e) extremely evaluative, (f) extremely confrontive, (g) extremely critical to effective supervision, (h) extremely characteristic of supervision with a competent (versus neophyte) trainee, (i) supervisor (versus trainee) structures supervison, and (j) supervisor (versus trainee) has power/authority. The scaling questionnaires were identical to the ones used by Ellis et al. (1986) and Ellis and Dell (1986).

Results

Descriptive Data

Descriptive data are presented because intact groups of trainees were used in this ex post facto research. The counselor trainees' orientation to counseling was distributed as 50% eclectic, 16.7% cognitive behavioral, 10.4%

systems, 8.3% psychodynamic, 6.3% cognitive, 4.2% gestalt, and 4.2% Rogerian. The trainees identified their supervisors' orientation to counseling as eclectic (45.8%), cognitive behavioral (16.7%), psychodynamic (16.7%), systems (4.2%), behavioral (4.2%), cognitive (2.1%), gestalt (2.1%), Rogerian (2.1%), and developmental (2.1%). In terms of percentages, there was little difference between the trainees' self-reported orientation and their supervisors' orientation. Ninety-one percent of the doctoral trainees and 64% of the master's trainees had doctoral level supervisors. The average duration of a supervisory session was 69.29 minutes (SD = 39.19) with a range of 20 to 180 minutes. The supervision format was individual one-on-one supervision for 85.7% of the trainees or a group consisting of the supervisor plus two to three trainees (14.3%). Trainees reported working with an average of four supervisors (M = 3.94, SD = 2.33). Fifty-two percent of the trainees had completed one course in the supervision of counselor trainees with the remaining not having formal coursework in supervision. Only 8.3% of the trainees had attended a workshop on supervising. Finally, 10% of the trainees had acquired some experience supervising counselor trainees.

The two groups of trainees were compared to determine differences in age, number of clients seen per week, number of supervisors, length of supervision, and proportion of men and women in each group. Two-tailed t-tests of the means for independent samples were performed with alpha set at .01. Doctoral trainees (M = 31.78, SD = 6.63) were found to be significantly older than master's trainees (M = 26.72, SD = 4.46; t = 5.14, $p < .01$). This makes sense given the 15 month master's program versus the five to six year doctoral program. The trainees in the doctoral program were seeing significantly more clients per week (M = 8.96, SD = 5.67) than the master's program trainees (M = 5.80, SD = 3.15; t = 2.71, $p < .01$). Although there was no significant difference in the length of a supervisory session for the two groups (t = .44, $p > .1$), the doctoral trainees did report working with more supervisors (M = 5.0, SD = 2.55) than their master's level counterparts (M = 3.0, SD = 1.66; t = 5.78, $p < .01$). Finally, a two-tailed z test of proportions for independent samples found no significant differences between the two groups in the proportion of men and women in each group (z = 1.43, $p < .08$).

Constrained MDS

A confirmatory MDS analysis was performed using INDSCAL (Carrol & Chang, 1970), a metric individual differences MDS program. The INDSCAL procedure generates an overall stimulus configuration plus dimensional weights for each matrix of dissimilarity judgments input into the program. To conduct the confirmatory MDS analysis, the dissimilarity ratings for the master's program and doctoral program trainees were averaged separately and input in the analysis. The two averaged dissimilarity ratings (proximity) matrices of nine supervisor role stimuli were fit into the three dimensional map (stimulus configuration) derived by Ellis and Dell (1986). Because the three dimensional configuration was derived using nine stimuli, only the nine supervisor role stimuli (and corresponding dissimilarity judgments) used in the Ellis and Dell study could be used in the analysis. Thus, the stimulus coordinates for the nine stimuli in three dimensions remained fixed while solving for the dimensional weights for the two averaged groups of trainees.

The overall degree of fit of the trainees' judgmments to the supervisors' "cognitive map" of supervision was assessed by three indices in INDSCAL; the correlation of the combined trainee proximity (or original) data and the computed spatial distances ($r_{y\hat{y}}$), the normalized residual variance ($1-r^2_{y\hat{y}}$), and an error term. All three overall indices of fit attested to a good fit: $r_{y\hat{y}} = .91$, $1-r^2 = .18$, and error = .36. Thus, the supervisors' stimulus space accounted for 83% of the variance in the master's and doctoral level trainees' judgments of the same nine stimuli. Further evidence of a good fit were the correlations of the computed distances and the original proximity data for each trainee group, i.e., $r_{y\hat{y}} = .90$ and .92 for the doctoral and master's trainees respectively. Similar correlations in the fixed stimulus space for each individual participant ranged from .45 to .87 ($M = .70$, $SD = .11$).

The dimensional weights for the doctoral program trainees were .30, .37. and .74 for Dimensions 1 to 3 respectively. The master's program trainees' dimensional weights for the first through third dimensions were .28, .48, and .71 respectively. The magnitude of the weights showed little differences between the two groups of traineees, except that the master's program trainees relied more heavily on the second dimension than the doctoral trainees.

Using the dimensional interpretations from Ellis and Dell (1986) and Ellis et al. (1986), the trainees based their judgments about supervision to a greater degree on the bipolar dimension that contrasts supportive emotional supervision of a competent trainee with evaluative cognitive behavioral supervision of a neophyte trainee. Trainees to a lesser extent made their judgments using the second bipolar dimension. At one pole of this dimension is the confrontive teacher-counselor supervisor who has the power/authority to structure what occurs in the supervisory session. The opposing pole consists of the nonconfrontive consultant supervisor role in which the trainee has the power and authority to structure the supervision sessions. The first dimenson, which is essentially a process-personalization- conceptualization continuum, was least important of the three dimensions for trainees when thinking about supervision.

Unconstrained MDS

In order to incorporate the three self-supervisor stimuli, an unconstrained MDS analysis was performed. As with the constrained analysis, the averaged proximity data of the twelve supervisor role stimuli for each group were subjected to analysis using the INDSCAL program. Two steps were necessary to complete the MDS analysis. First, the number of dimensions necessary to adequately account for the judgments made by the trainees was determined. Second, the retained dimensions were plotted and subsequently interpreted using both objective and subjective procedures.

In choosing the number of dimensions to retain, several competing factors were considered. A minimum of three or more stimuli was necessary for each dimension retained to assure adequate stability of the MDS solution (Davison, 1983). The maximum number of dimensions suitable for twelve stimuli was four

or less. MDS solutions were obtained for one to five dimensions. The overall $r_{y\hat{y}}$ and $1-r_{y\hat{y}}$ values were plotted against the number of dimensions. This was done because the point where the "elbow" occurs in the plot signified the optimal dimensionality. Here, there was a slight albow at the third dimension. The solution with the best fit was also desired and was determined by maximizing overall $r_{y\hat{y}}$ while minimizing $1-r^2$ and error. As the number of dimensions increases, however, the difficulty in understanding and interpreting the spatial configuration (dimensions) increases geometrically.

Employing all of the above criteria resulted in retaining the three-dimensional INDSCAL solution ($r_{y\hat{y}}$ = .87, $1-r^2$ = .25, error = .51). The intercorrelations among the three dimensions revealed that Dimensions 1 and 3 (r = .03) and Dimensions 2 and 3 (r = .10) were independent. Dimensions 1 and 2 (r = -.40) had a moderate and negative correlation. This pattern of intercorrelations of the dimensions is slightly different from the pattern in the three dimensional space for nine stimuli used in the confirmatory MDS (rs of -.21, .01, and .14 respectively).

Interpretations of the spatial configuration were deduced from (a) subjective inspections of the stimuli within the stimulus map, (b) correlations of the dimensions and bipolar attribute scales, and (c) the trainees' self-reported importance of several plausible dimensions for their dissimilarity judgments. Subjective interpretations included examining both the grouping of the stimuli (i.e., the neighborhood method) and the ordering of the stimuli along each dimension. To examine the ordering of the stimuli on a single dimension, the twelve stimuli were first projected onto that dimension. For objective interpretations of the stimulus configuration, the participants rated the twelve stimuli on ten bipolar attribute scales (e.g., not at all emotional versus extremely emotional). The means and standard deviations of the ten bipolar attribute scales for all trainees (both groups combined) are presented in Table 2. To obtain objective interpretations of the dimensions, the coordinates of the twelve stimuli in each dimension were correlated with the mean ratings of the stimuli on a particular bipolar scale. The resulting thirty-six correlations are presented in Table 3.

One should note that the stimulus configuration generated by INDSCAL is not rotatable except for rare situations (see Davison, 1983). Hence, correlating the dimensions with the bipolar scales provided a useful and parsimonious interpretation of the stimulus space. Ideally, according to Davison, a bipolar scale should be significantly correlated greater than r = .70 with one dimension and be uncorrelated with the other dimensions. Perusal of Table 3 revealed that six of the ten bipolar scales met this criteria. One correlation (extremely confrontive) was statistically significant but not greater than .70. Although the seven bipolar scales were correlated significantly with only one dimension, they were not completely uncorerelated with either of the other two dimensions. Given this, the objective interpretations were considered tentative. Type I error was controlled by reducing alpha to .02. Thus, one of the thirty-six correlations could have reached statistical significance by chance alone.

In addition to the bipolar attribute scales, participants rated how important 14 bipolar dimensions were for them when making their dissimilarity judgments. The means and standard deviations averaged across all trainees for the 14 plausible dimensions appear in Table 4. The self-reported importance of the plausible dimensions provided corroborating support for the subjective and objective interpretations of the dimensions for the cognitive map trainees used to make judgments about supervision.

The stimulus configuration with complete interpretations is mapped in FIgures 1 to 3. Subjective inspection of the first dimension (Figures 1 and 2) suggested a conceptualization versus non-conceptualization dichotomy. That is, Bernard's (1979) supervision function of conceptualization anchored one end of Dimension 1 with the process and personalization supervision functions combined at the other end. Only one bipolar attribute scale correlated significantly with the first dimension; i.e., extremely cognitive. Reviewing Table 4 confirms that trainees rated the dimensions contrasting the supervisor functions of conceptualization, process, and personalization as important criteria when making dissimilarity judgments. Trainees also rated the dimensions which differentiated cognitive, behavioral and emotional as important. Yet, the mean ratings for these plausible dimensions were relatively low compared to the other plausible dimensions. To summarize the interpretations for Dimension 1, the trainees distinguished among the stimuli using a cognitive conceptualizing versus non cognitive process-personalization dimension.

The second dimension appears to be a supervisor role continuum where the self-supervisor role and the teacher role secure the two ends of the continuum. The ordering of supervisor roles along the continuum is self-supervisor, consultant, counselor, and teacher. Five of the bipolar attribute scales reached statistical significance (i.e., extremely evaluative, extremely confrontive, extremely competent (versus neophyte) trainee, supervisor (versus trainee) structures supervision, and supervisor (versus trainee) has power/authority). The correlation for the extremely confrontive bipolar scale, however, did not satisfy Davison's (1983) criteria (i.e., $r > .7$). Hence, it was not included in the interpretations or figures. Referring to the mean ratings in Table 4, the trainees' self-reported importance of the plausible dimensions corresponding to the five significant bipolar scale correlations for Dimension 2 are consistent with the magnitude of those correlations. In short, the trainees distinguished along a continuum of supervisor roles where the roles were ordered on the basis (a) of the degree the trainee has power and authority to structure what occurs during supervision sessions, (b) of the trainees' level of competence, and (c) of how evaluative supervision is perceived to be. Thus, the non-evaluative self-supervisor role where the competent trainee structures supervision and has the power/authority is contrasted to the evaluative teacher role where the supervisor has the power/authority and structures supervision for the neophyte trainee.

The third dimension is less clear in terms of a subjective interpretation. The dimension seems to contrast the personalization function

with the process function. Two of the bipolar attribute scales (i.e., extremely emotional and extremely behavioral) correlated significantly and in opposing directions with Dimension 2. Consequently, the preferred interpretation of this dimension is an emotional-behavioral continuum. The stimuli arrangement in Figure 2 is interesting and merits comment. Surveying the map, the four process stimuli are localized in the lower left quadrant. The four personalization stimuli lie within the upper right quadrant. The right half of the figure contains the four conceptualization stimuli. That is, the three supervisor functions are fairly well differentiated. Trainees appeared to use Dimension 1 in combination with Dimension 3 to circumscribe the three supervisory functions.

M.S. vs. Ph.D. Trainees

Assessing for differences between master's program and doctoral program trainees was important for two reasons. One purpose of the study was to determine if counselor trainees from master's programs use the same cognitive map as doctoral program trainees. Second, some of the information provided by INDSCAL for group (and individual) analyses also function as indices of how well each participant and the two groups were fit by the overall stimulus configuration. As in the constrained MDS analyses, correlations of the original proximity data and computed scores were generated for both groups and the 48 participants. The correlations ($r_{y\hat{y}}$) for the master's trainees and doctoral trainees were .87 and .86 respectively. Given the overall $r_{y\hat{y}}$ = .87, the group correlations demonstrate that the three dimensional stimulus configuration fit each group very well. The average individual $r_{y\hat{y}}$ was .68 (SD = .09) with a range of .47 to .83. Although lower than the overall and group correlations, the stimulus configuration provided a good fit for the majority of individual participants.

The dimensional weights for the master's trainees were .40, .45, and .58 for Dimensions 1 to 3. The analogous weights for the doctoral trainees were .52, .33, and .55. Thus, the master's trainees relied most heavily upon the emotional-behavioral dimension (Dimension 3) when thinking about supervision. The cognitive conceptualization versus non cognitive process-personalization dimension (Dimension 1) and the dimension contrasting the non-evaluative self-supervisor role for competent trainees with the evaluative teacher role for neophyte trainees (Dimension 2) were employed to approximately the same extent by trainees from the master's programs. In contrast, the doctoral trainees emphasized the emotional-behavioral continuum (Dimension 3) and the cognitive conceptualization versus non cognitive process-personalization dimension (Dimension 2) both moderately strongly and relatively equally. The second dimension was not as important to the doctoral trainees in making judgments of supervision.

Discussion

We began this study with several fascinating questions: Was the nine stimuli structure of supervision found by Ellis and Dell (1986) stable and replicable when applied to counselor trainees? What is the underlying

structure (cognitive map) of supervision when twelve supervisor role stimuli are judged by counselor trainees? How well does the stimulus configuration for supervisors (Ellis & Dell, 1986) and counselor trainees (Ellis et al., 1986) fit judgments made about the same stimuli by trainees from master's level counseling programs and doctoral counseling psychology programs? Do trainees from master's in counseling programs differ from trainees in a Ph.D. counseling psychology program in terms of how they think about supervision? How well do two current models of supervision account for the dimensions supervisors and trainees use when thinking about supervision?

In order to answer these questions, counselor trainees from two master's in counseling programs and a doctoral counseling psychology program made pairwise comparisons among twelve stimuli, nine of which were identical to those used by Ellis and Dell (1986) and Ellis et al. (1986). Results from the confirmatory MDS analysis found a remarkably good fit of the trainees' perceptions to the cognitive map used by supervisors. That is, all of the goodness of fit measures indicated that both supervisors and trainees use the same cognitive map of supervision, a finding consistent with that found by Ellis et al. Only minimal differences were found between the two groups of trainees. Not only were the proximity data from each group fit equally well by the Ellis and Dell stimulus configuration, but also, the two groups used the dimensions in strikingly similar patterns.

Three dimensions emerged from the unconstrained MDS analysis using twelve supervisor role stimuli. Thus the twelve stimuli cognitive map the trainees relied upon when thinking about supervision in this study seems to be fairly well represented in three dimensions. The judgments of supervision made by the two groups of trainees were fit well by the overall twelve stimuli configuration. Trainees from both the master's and doctoral programs appear to use the same three dimensions but differ ever so slightly in the relative importance of each dimension.

In terms of assessing the underlying structure of supervision, a clear picture of the dimensions used by master's and doctoral trainees emerged. The first dimension suggests a continuum of supervisor functions which contrasts the cognitive conceptualization function versus the non cognitive process and personalization functions combined. The second dimension represents a supervisor role continuum. The non-evaluative self-supervisor role, where the competent trainee has the power to structure supervision, anchors one end of the continuum. The opposing end is anchored by the evaluative teacher role where the supervisor has the authority to structure supervision for the neophyte trainee. The third dimension is interpreted as an emotional-behavioral continuum.

Comparing the results of the twelve stimuli configuration with the nine stimuli configuration reveals remarkable parallels. The addition of the three self-supervisor role stimuli appears to expand the configuration. The first dimension of Ellis & Dell (1986) and Ellis et al. (1986) (i.e., conceptualization vs. process) is a subset of Dimension 1 in this study (cognitive conceptualizaton vs. non-cognitive process-personalization). The

differentiation of Bernard's (1979) three supervisor functions is not as clear-cut in this study. The second dimension for the nine stimuli configuration (teacher-counselor vs. consultant) is more fully delineated here (i.e., a self-supervisor - consultant - counselor - teacher continuum). The consistent issues important to trainees in making decisions about this dimension are who has the power and authority as well as who structures the supervisory interaction. There were some discrepancies of the other salient issues among the three studies. For Ellis et al. trainees viewed the second dimension with a confrontive - non confrontive perspective in addition to assessing the criticalness to effective supervision. In this study, trainees were more concerned about an evaluative - non evaluative aspect and the trainees' level of competence. In short, the second dimension in the nine and twelve stimuli cognitive maps are considerably more similar than different.

Regarding the third dimension of the two stimulus configurations, the ordering of the nine stimuli shared in common are identical except for one reversal (consultant-process and teacher-conceptualization). Whether this dimension is interpreted as supportive emotional versus cognitive behavioral or emotional versus behavioral, the predominant emphasis remains the same. The additional issues of Ellis and Dell and Ellis et al. (i.e., supervisor (versus trainee) structures and has power, evaluativeness, and trainees' level of competence) is not replicated here. One additional consistency across the studies is noteworthy. Examining Figure 2 in Ellis and Dell, Ellis et al., and this study shows a common pattern among the stimuli in the map. As with this study, the stimuli are grouped in supervisor function regions. That is, all the process stimuli are geographically close as are the conceptualization and personalization stimulus groups.

The supervisory process model proposed by Bernard (1979) is somewhat supported by the results of this study. The first and second dimensions of the twelve stimuli configuration relate to supervisor roles and functions. Contrary to the results of Ellis and Dell and Ellis et al., trainees did distinguish between the teacher and counselor supervisor roles. The supervisor functions of personalization and process, however, were not clearly differentiated on any one dimension, a finding consistent with the two previous studies. Recall that Bernard did not postulate an ordering among the supervisor roles or functions. Least supportive of Bernard's model is the current finding that three dimensions are necessary to account for trainees' perceptions of supervision.

Little support is found of the Littrell et al. model. The second dimension is analogous to the single dimension included in their model. They posited a continuum of responsibility for structuring supervision that shifts from the supervisor to the trainee concomitant with the trainees' developing level of professional competence. Paralleling this continuum, the supervisor moves from the combined teacher and counselor role to a consultant role, with the trainee finally entering the self-supervisor role. The trainees in this study made distinctions between the teacher and counselor roles. This finding is contrary to Littrell et al.'s model and to the previous research of Ellis and his associates. Obviously, Littrell et al.'s notion that a single

dimension accounts for all aspects of supervision is not compatible with the results found here.

The three underlying dimensions of supervision found here seem to be represented, at least in part, by other models of supervision. For example, Stoltenberg's (1981) Counselor Complexity Model portrays the changes necessary in supervision to accommodate the trainees' development. The changes Stoltenberg depicts focus on modifying the extent and amount the supervisor structures supervision as the trainee becomes more competent, which is consistent with Dimension 2. The transitions from the supervisor role of teacher, to counselor, to consultant and then self-supervision appears characteristic of the trainee progressing from Stages 1 to 4 respectively. Stoltenberg also emphasized the importance of support in the first two stages. In light of the results of this study, however, support is not identified with a single dimension of supervision. Hence, many aspects of Stoltenberg's model are important to both trainees' and supervisors' perceptions of supervision, but not entirely as hypothesized by Stoltenberg.

What can be concluded from the results of this study? Two findings predominate. Foremost, none of the current models of supervision explicitly attend to all three dimensions uncovered here. Thus, the empirical results of Ellis and Dell (1986), Ellis et al. (1986), and this study affirm Heppner and Roehlke's (1984) assertion that all of the models of supervision are conceptually narrow in scope. Combining Bernard's (1979) two dimensional model with Littrell et al.'s (1979) unidimensional developmental model could prove fruitful. In fact, the two combined models might be encompassed by Dimensions 1 and 2 of this study. Nonetheless, the new model would remain deficient as Dimension 3 would not be incorporated.

The second important finding from this study is that supervisors' and trainees' cognitive maps of supervision are strikingly similar. This finding replicates Ellis et al. (1986), yet is in direct contrast to the research that found counselor trainees' perceptions of supervision did not match the perceptions of supervisors (e.g., Heppner & Roehlke, 1984; Reising & Daniels, 1983; Worthington & Stern, 1985). One plausible explanation is that MDS is a better data reduction procedure than principal components analysis (Kruskal & Wish, 1978) on which the latter studies were based. That is, the dimensions uncovered by MDS are indeed more centrally important and stable across sample and setting (cf., Worthington, 1984).

The results found here should be viewed with some caution. The poor internal validity of ex post facto design does not permit ruling out some important "extraneous" variables. For example, the type, quantity, and quality of supervision (past or present) was not controlled; neither were other important variables such as cognitive complexity (Blocher, 1983).

The number and type of dimensions obtained in this study were constrained somewhat by the twelve stimuli used. Thus, other dimensions might emerge from the use of different stimuli derived from rival models of supervision. The stimuli and the bipolar attributes upon which the stimuli were rated also limit the interpretation of the dimensions.

Finally, the results of this study may not generalize beyond the particular sample of trainee participants. Even though Worthington (1984) argues that supervision varies across settings, the results here refute this finding. The Ellis and Dell (1986) and Ellis et al. (1986) studies were conducted in the same academic department. This study was done in an entirely different region of the country; however, the results are remarkably similar. To what extent the stimulus configuration and interpretations of the dimensions generalize beyond doctoral counseling psychology departments remains open to empirical investigation.

These limitations notwithstanding, this study has merit as a continuing endeavor to ascertain the salient dimensions of supervision. Indeed, the results from this study in combination with the findings of Ellis and Dell (1986) and Ellis et al. (1986) present growing evidence for three specific dimensions of supervision. Given that current models of supervision do not provide comprehensive explanations of the supervision of counselor trainees, research is warranted to accurately depict the process and efficacy of supervision.

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Table 1

Twelve Supervisor Roles: Stimuli and Definitions

Stimulus	Definition
Teacher - process	Supervisor demonstrates, describes, or provides feedback on specific interpersonal, treatment, intervention, or diagnostic techniques and skills.
Counselor - process	Supervisor helps trainee determine what hinders or facilitates their executing interventions with a specific client; focuses on reducing inhibitions, encouraging experimentaton within counseling sessions, or both.
Consultant - process	Supervisor works with trainee to explore different uses of an intervention and jointly practices them; focuses on mutual learning of intervention skills.
Self-supervision - process	Self-supervision for learning new interventions, techniques, or diagnostic strategies and skills; self-exploration to reduce inhibitions, encourage experimentation within counseling sessions, or both.
Teacher - conceptualization	Supervisor demonstrates, describes, or provides feedback on one or more ways to classify, organize, and understand client's behavior, thoughts, affect, and problems, and then develops appropriate therapeutic goals and strategies.
Counselor - conceptualization	Supervisor helps trainee understand how their stereotypes, conceptualizations, and unresolved issues affect the counseling session and provides alternative perspectives.
Consultant - conceptualization	Supervisor and trainee explore mutually issues and implications of theories, models, and alternative conceptualizations to counseling.
Self-supervision - conceptualization	Self-supervision to learn new conceptual approaches or models for counseling, determining multiple perspectives of client's behaviors, thoughts, affect, and problems, and then developing multiple intervention goals and strategies.
Teacher - personalization	Supervisor demonstrates, describes, or provides feedback on the potential importance of trainee's affect, and ways of recognizing and using one's feelings and intuitions during counseling.
Counselor - personalization	Supervisor helps the trainee work through personal issues and feelings associated with particular clients or counseling sessions.
Consultant - personalization	Supervisor and trainee explore mutually personal concerns relevant to counseling and clients.
Self-supervision - personalization	Self-supervision of personal issues and feelings related to counseling sessions or clients, learning new ways to recognize and use one's feelings and intuitions within counseling sessions.

Table 2

Means and Standard Deviations for the Ten Bipolar Attribute Scales for the Twelve Supervisor Role Stimuli: M.S. and Ph.D. Trainees Combined

	Positive Pole of Rating Scale																	
	Extremely Cognitive		Extremely Emotional		Extremely Behavioral		Extremely Supportive		Extremely Evaluative		Extremely Confrontive		Extremely Critical to Supervision		Extremely Competent Trainee		Supervisor Structures		Supervisor Has Power/ Authority	
Stimuli	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Teacher - process	6.56	1.79	3.10	1.91	7.28	1.66	4.94	1.92	6.31	2.23	5.21	2.29	6.11	2.20	2.09	1.49	8.19	1.25	8.28	1.36
Counselor - process	5.90	1.64	5.46	1.62	5.57	2.21	6.92	1.40	5.63	1.93	5.54	1.83	6.94	1.84	4.17	2.06	6.40	1.80	6.48	1.52
Consultant - process	6.08	1.77	3.98	1.89	6.77	2.02	6.73	1.57	4.50	1.95	4.44	1.76	6.17	1.96	5.45	2.45	5.42	1.57	5.58	1.62
Teacher - conceptualization	7.71	1.76	2.90	1.97	5.98	2.03	4.75	1.56	6.54	1.98	5.15	2.11	6.48	2.06	2.43	1.68	7.73	2.03	8.19	1.16
Counselor - conceptualization	6.58	1.69	5.46	2.10	4.38	1.75	6.33	1.26	5.25	1.95	5.98	1.96	6.94	1.88	4.49	1.93	5.94	1.68	6.21	1.58
Consultant - conceptualization	6.65	1.92	3.67	2.11	4.15	1.84	5.63	1.85	4.30	1.90	4.54	1.89	6.31	1.93	5.53	2.14	5.40	1.61	5.38	1.38
Teacher - personalization	5.52	2.02	6.29	1.79	4.67	1.97	6.27	1.66	6.21	1.64	6.10	2.20	6.53	2.13	3.40	2.07	7.21	2.02	7.57	1.57
Counselor - personalization	4.48	2.54	7.81	1.55	3.11	1.90	8.08	0.85	4.10	2.29	6.00	1.89	6.79	1.98	5.62	2.07	4.67	2.22	5.38	2.03
Consultant - personalization	4.52	2.12	7.42	1.40	3.11	1.86	7.88	0.98	3.79	2.02	5.46	1.68	6.23	1.86	7.00	1.68	4.31	1.40	4.77	1.40
Self-supervision - process	6.19	1.93	5.27	1.72	5.81	2.40	4.77	2.43	4.32	2.17	3.69	2.41	6.17	2.38	7.38	1.60	1.79	1.24	1.94	1.78
Self-supervision - conceptualization	7.27	1.53	4.13	1.97	4.83	2.21	4.44	2.39	4.02	2.13	3.25	2.11	6.00	2.39	7.36	1.79	1.54	1.06	1.53	0.95
Self-supervison - personalization	4.85	2.49	7.83	1.69	3.28	2.03	5.29	2.67	4.38	2.43	4.71	2.71	6.53	2.81	7.79	1.33	1.45	1.27	1.34	0.73

Note: The scales used 9-point bipolar ratings where 9 indicated the positive pole, that is, the descriptor at the head of each column.

Table 3

Correlations of Bipolar Attribute Scales with the Three Dimensions

	Dimension		
Positive Pole of Rating Scale	1	2	3
Extremely cognitive	.73**	-.27	-.55
Extremely emotional	-.48	.56	.72**
Extremely behavioral	.09	-.32	-.94***
Extremely supportive	-.31	-.14	-.57
Extremely evaluative	.13	-.77**	-.39
Extremely confrontive	-.12	-.67*	.46
Extremely critical to effective supervision	-.08	-.27	.55
Extremely competent (versus neophyte) trainee	-.30	.94***	.34
Supervisor (versus trainee) structures supervision	.29	-.96***	-.23
Supervisor (versus trainee) has power/authority	.28	-.98***	-.18

Note: * $p < .02$

** $p < .01$

*** $p < .001$

Table 4

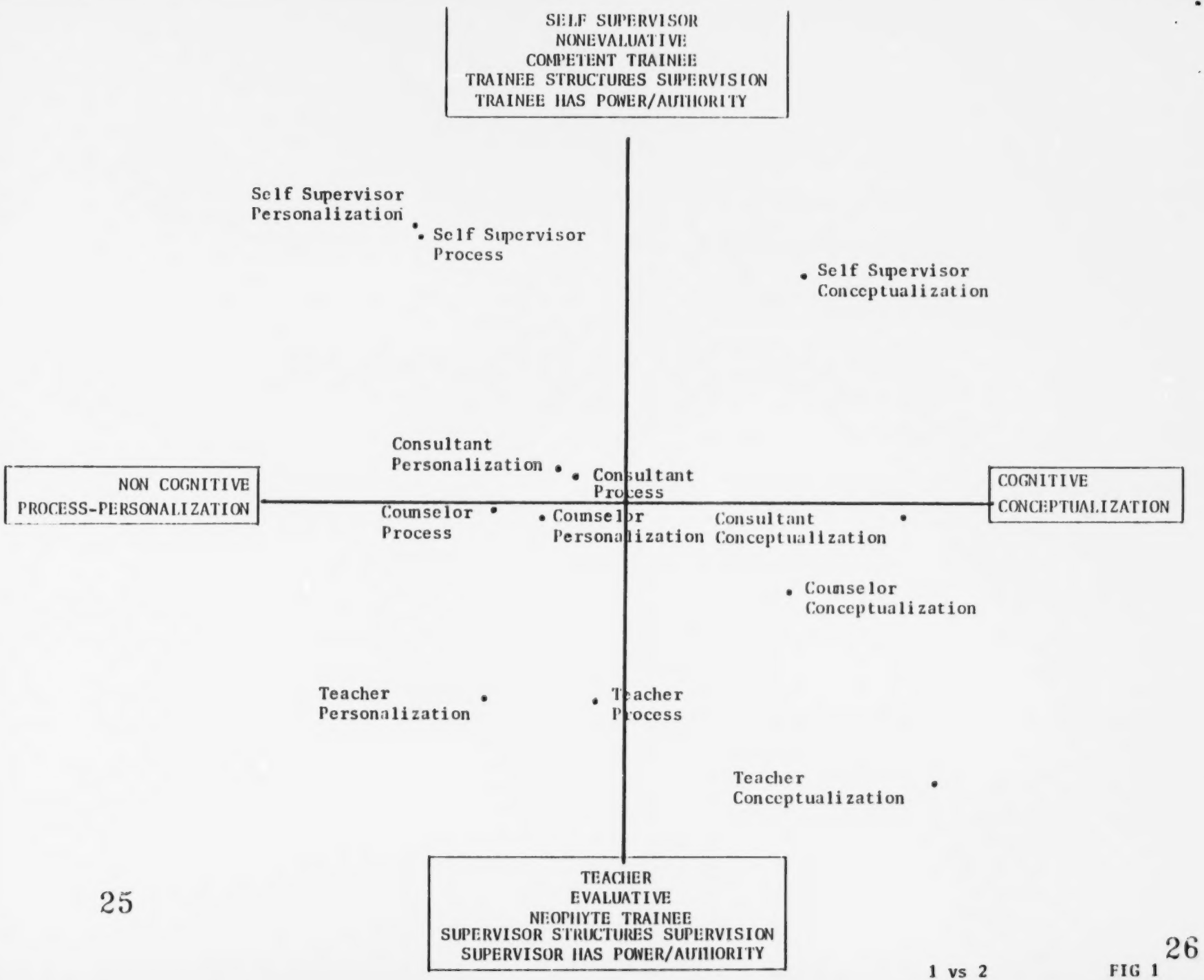
Means and Standard Deviations for 14 Dimensions Rated on Degree of Importance When Making Dissimilarity Judgments, M.S. and Ph.D. Trainees Combined

	M	SD
Cognitive vs. emotional	5.44	2.59
Cognitive vs. behavioral	3.40	2.41
Emotional vs. behavioral	5.23	2.71
Teacher vs. consultant	6.63	2.25
Teacher vs. counselor	6.56	2.44
Consultant vs. counselor	5.56	2.22
Confrontive vs. non-confrontive	4.83	2.83
Evaluative vs. non-evaluative	5.33	2.82
Challenging vs. supportive	5.17	2.69
Process vs. conceptualization	5.79	2.48
Process vs. personalization	6.35	2.29
Conceptualization vs. personalization	6.52	2.07
Trainee vs. supervisor has power/authority	5.75	2.49
Trainee vs. supervisor structures supervision	5.44	2.81

Note: Ratings used a 9-point bipolar scale such that 1 indicated the dimension was Not At All Important To Me in making dissimilarity judgments, and 9 indicated Very Important To Me.

Figure Caption

Figure 1: Stimulus configuration from INDSCAL analysis, a metric individual differences MDS program (Carroll & Chang, 1970), for twelve supervisor roles: Dimension 1 (x axis) versus 2 (y axis).

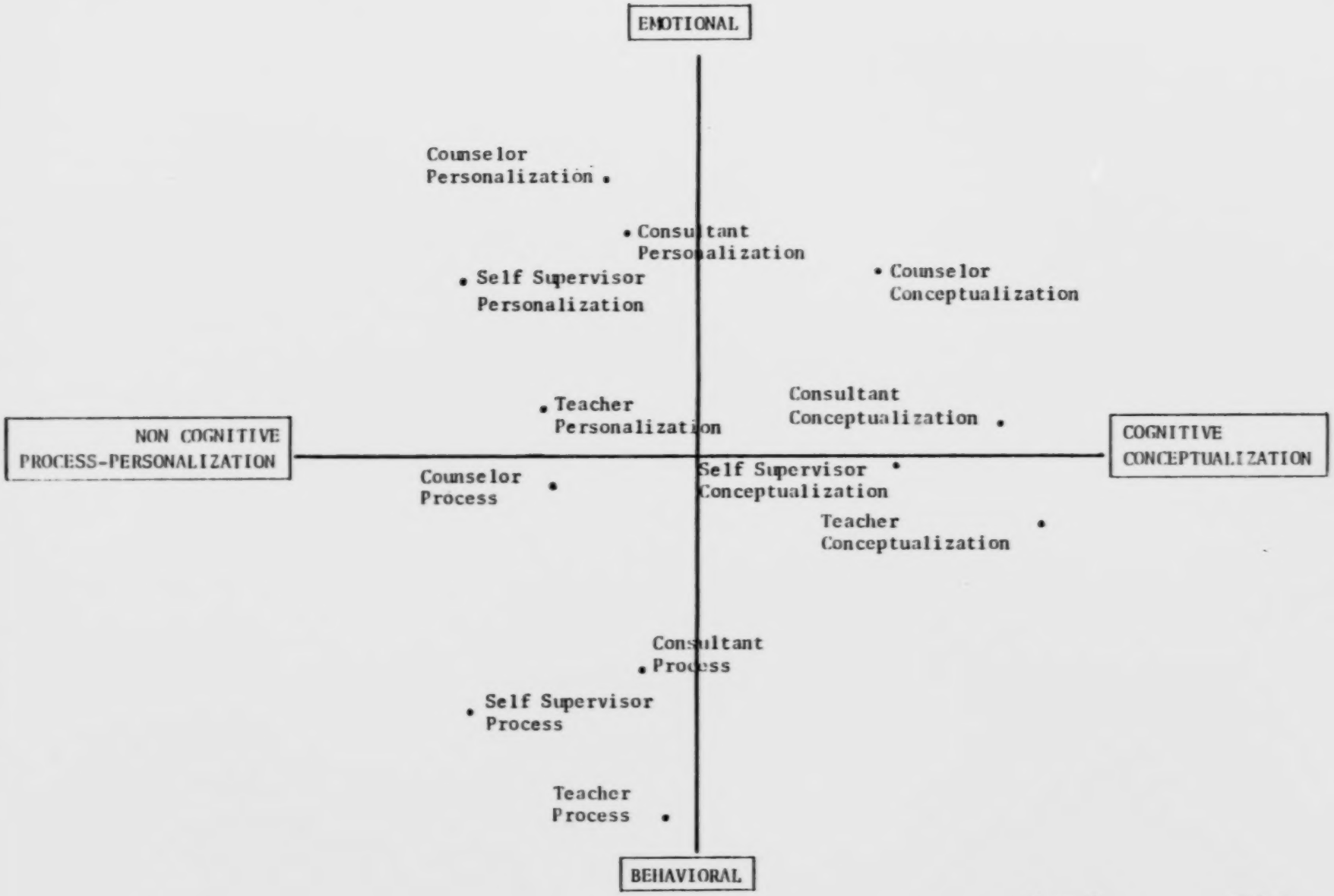

SELF SUPERVISOR
NONEVALUATIVE
COMPETENT TRAINEE
TRAINEE STRUCTURES SUPERVISION
TRAINEE HAS POWER/AUTHORITY
Self Supervisor Personalization
Self Supervisor Process
Self Supervisor Conceptualization
Consultant Personalization
Consultant Process
NON COGNITIVE
PROCESS-PERSONALIZATION
COGNITIVE
CONCEPTUALIZATION
Counselor Process
Counselor Personalization
Consultant Conceptualization
Counselor Conceptualization
Teacher Personalization
Teacher Process
Teacher Conceptualization
TEACHER
EVALUATIVE
NEOPHYTE TRAINEE
SUPERVISOR STRUCTURES SUPERVISION
SUPERVISOR HAS POWER/AUTHORITY

1 vs 2

FIG 1

Figure Caption

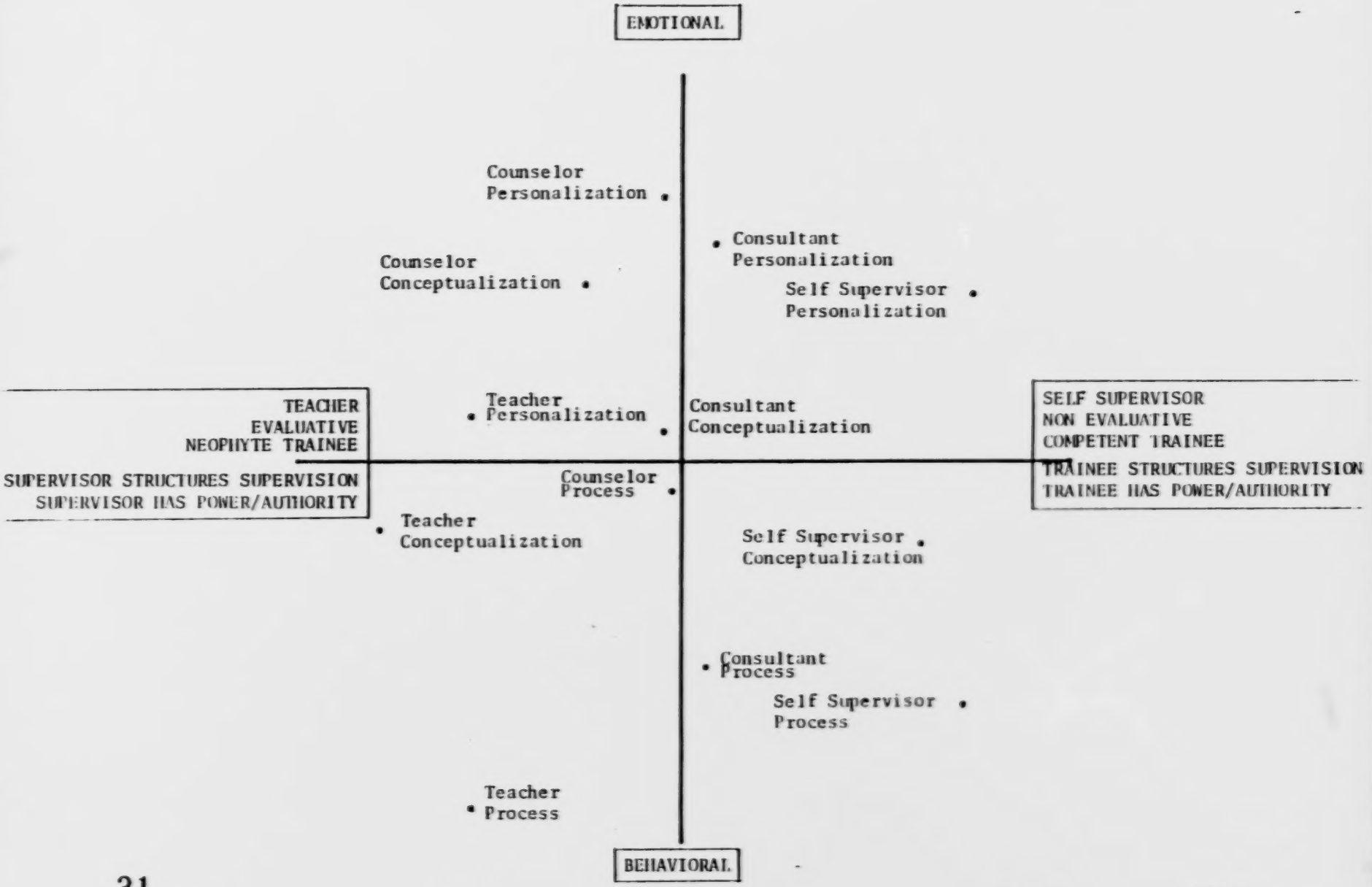
Figure 2: Stimulus configuration from INDSCAL analysis, a metric individual differences MDS program (Carroll & Chang, 1970), for twelve supervisor roles: Dimension 1 (x axis) versus 3 (y axis).


EMOTIONAL
Counselor Personalization
Consultant Personalization
Self Supervisor Personalization
Counselor Conceptualization
Teacher Personalization
Consultant Conceptualization
NON COGNITIVE PROCESS-PERSONALIZATION
COGNITIVE CONCEPTUALIZATION
Counselor Process
Self Supervisor Conceptualization
Teacher Conceptualization
Consultant Process
Self Supervisor Process
Teacher Process
BEHAVIORAL

1 vs 3 FIG 2

Figure Caption

Figure 3: Stimulus configuration from INDSCAL analysis, a metric individual differences MDS program (Carroll & Chang, 1970), for twelve supervisor roles: Dimension 2 (x axis) versus 3 (y axis).


EMOTIONAL
Counselor Personalization
Consultant Personalization
Counselor Conceptualization
Self Supervisor Personalization
TEACHER EVALUATIVE NEOPHYTE TRAINEE
SUPERVISOR STRUCTURES SUPERVISION
SUPERVISOR HAS POWER/AUTHORITY
Teacher Personalization
Consultant Conceptualization
SELF SUPERVISOR NON EVALUATIVE COMPETENT TRAINEE
TRAINEE STRUCTURES SUPERVISION
TRAINEE HAS POWER/AUTHORITY
Counselor Process
Teacher Conceptualization
Self Supervisor Conceptualization
Consultant Process
Self Supervisor Process
Teacher Process
BEHAVIORAL

2 vs 3 FIG 3